

76. (original) The method of Claim 51, 52, 53 or 54 wherein (b) is performed automatically in response to at least one triggering event.

77. (new) The method of Claim 73 wherein (b4) is performed automatically in response to a triggering event.

78. (new) The method of Claim 74 wherein (b4) is performed automatically in response to a triggering event.

79. (new) The method of Claim 75 wherein (b4) is performed automatically in response to a triggering event.

80. (new) The method of Claim 49 wherein (c) is performed automatically in response to a triggering event.

81. (new) The method of Claim 50 wherein (c) is performed automatically in response to a triggering event.

82. (new) The method of Claim 70 or 72 wherein (c3) is performed automatically in response to a triggering event.

REMARKS

Claims 1-47 had been cancelled due to the Examiner's restriction requirement. These claims may be filed in the original or amended form in a divisional application. In the Office Action dated Jan. 29, 2004, claims 51-72 and 74-76 were allowed and claims 48-50 and 73 were rejected.

In the Advisory Action the Examiner deemed the final rejection to be proper.

Applicant disagrees with the Examiner's assertions in the Advisory Action. The Examiner defends that U.S. Patent No. 5,308,353 to Beurrier discloses all of the aspects of the claimed invention, as does Publication No. 2002/011601A1 to Chee Chung.

In U.S. Patent No. 5,308,353, Beurrier does not disclose a method but a suturing device and does not disclose, in writing or in picture, how a knot is formed automatically by using the device or suggest automatically forming a knot using a suturing device. Beurrier only says that "a suture knot can be semi-automatically tied by prearranging the suture thread on the head assembly before suturing, followed by simple manual manipulation of the ligature material after the thread has been installed in the biological tissue" [Column 2, lines 43-48]. This sentence mentions two manual manipulations, one before and one after installation of a thread in tissue. And, this statement is not a disclosure of automatically forming a knot using a suturing device as claimed in claim 48. The other lines [column 10, lines 58-68 and Column 11, lines 12-15], where Beurrier mentions tying a knot, explain the process. In particular the following sentence quoted from Beurrier's patent explicitly states that the pre-looped suture thread is kept secured to the head of the device during the suturing process, and after the suturing process (i.e. passing the suture through tissue) the user removes the thread from the device and tie a knot to secure the suture:

"Capstan-like post 95 has rounded edges which helps to secure the pre-looped suture thread to head 2 during the suturing process, but also allows thread 92 to be easily removed from head 2 when a user is prepared to tie a knot to secure a suture" [column 10, lines 58-62].

That is, it is not the device that ties a knot. In Beurrier's Figures 3 and 4 the Capstan-like post's 95 and the needle's 5 positions are clearly depicted. It is obvious that one or even more rotations of the needle can not pass the suture through any loop of the suture secured around the Capstan-like post. Also, as expected, this is not implied or

asserted by Beurrier. It is also not possible for the needle 5 itself to form a loop that can make a knot regardless of the number of the rotations. Again, as expected, this is not implied or asserted by Beurrier either. In addition, Beurrier describes how some of the thread manipulation can be done outside the body cavity of the patient drawing up a loop of the thread away from the device after installation of the thread through tissue [column 10, lines 62-68].

The only automatic action in Beurrier's disclosure is the rotation of the needle and it can only pass the suture through tissue but can not form a knot or even a loop that can contribute to formation of a knot, or pass the suture through a loop. In conclusion, Beurrier does not disclose or suggest a method where a knot is formed automatically by a suturing device.

Chee Chung (Publication No. 2002/011601A1) was filed on September 28, 2001, well after the March 21, 2001 filing date of the above captioned application. Accordingly, Chee Chung is not prior art. Reliance on Chee Chung to reject claims of the current application is improper.

Even if prior art, Chee Chung simply does not disclose any structure for looping. In addition none of the acts that are described in Chee's application is automatically done by the device. In particular the needle does not move automatically and it never passes through a loop. The language describing the actions to form the knot in Chee's application follows:

"[0013] A knot is made with the two obtained ends, and pushed forward to the target region through a channel of the endoscope by the knot pressure." and "[0040] (7.) As shown in FIG. 13, the two end portions of the suture 7 brought out from the body cavity are knotted, and the knot is pushed to the sutured region through the forceps channel 24 by the knot pusher 35. The suturing process is completed after repeating this procedure several times so as not to loosen the knot."

The acts described in these paragraphs are performed manually. In particular, there is no structure other than manual manipulation devices shown for forming a knot.

Chee's device does not pass the suture through any loop. Even the needle does not move automatically. There are two ends of a rope (31 and 32 in Chee's figures) which the user pulls to rotate the needle:

"[0035] (2.) The curved needle 2 is brought to the location shown in FIG. 4 by backwardly rotating the rotation disk 3 by pulling on the curved needle control section 31.

[0036] (3.) After the curved needle 2 is stuck into the region to be sutured in an almost transverse way, as shown in FIG. 5, by forwardly rotating the rotation disk 3 by pulling the curved needle control section 32, one end of the suture 7 that is out of the tissue is grasped by the suture grasping/withdrawing means 8 inserted from the forceps channel 24, and brought out from the body cavity as shown in FIG. 6."

Figures 4 through 13 in Chee's application show that no loop is formed until Figure 13, in which a half-hitch formed manually outside the body cavity by the user is pushed inside the body cavity through the device using the "knot pusher" 35. Figure 12 shows a "U" shaped suture with its two ends going up into the device (and those ends directly come out of the device at the proximal end of the device from the opening 15 without any change in their position. This is not shown in Figure 12 but by the suture 7 in Figures 1 and 19). That is, there is not yet even a loop but a "U" shaped suture that has been passed through tissue until Figure 13. In Figure 12, the needle is sitting aside since its job has ended, and yet there is not a loop. There is no structure described or shown to form the loop of Figure 13. Given the structures that are disclosed by Chee, the user obviously manually forms the knot half-hitch by half-hitch and pushes it down through the device. Chee does not disclose automatically forming a loop or passing the suture through a loop. Chee does not suggest the automatic formation of a knot.

Also, please note that in his response to the Office Action dated Jan. 29, 2004, Applicant did not assert that tightening is a part of the process of forming a knot. But, he asserted that his device can tighten a knot automatically while the prior art can not.

CONCLUSION

Applicant respectfully submits that all of the pending claims are in condition for allowance and seeks early allowance thereof. If for any reason, the Examiner is unable to allow the application and believes that an interview would be helpful to resolve any remaining issues, he is respectfully requested to contact the undersigned attorneys at (312) 321-4200.

Respectfully submitted,



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